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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,508	11/02/2000	Charles W. Hewitt	601-1-100	4767
23565	7590	06/18/2004	EXAMINER	
KLAUBER & JACKSON 411 HACKENSACK AVENUE HACKENSACK, NJ 07601			LU, TOM Y	
			ART UNIT	PAPER NUMBER
			2621	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/704,508

Applicant(s)

HEWITT ET AL.

Examiner

Tom Y Lu

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-7 and 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment and written response filed on March 18, 2004 has been entered.
2. Claims 3 and 8-10 are cancelled.
3. Claims 11-14 are added.
4. Claims 1-2, 4-7 and 11-14 are pending.

Response to Arguments

5. Applicant's arguments, see Remarks, filed on February 26, 2004, with respect to the rejection(s) of claim(s) 1 under 35 U.S.C. 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Greenberg et al (U.S. Patent No. 5,345,333) and Dekel et al (U.S. Patent No. 5,810,008).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 4-7 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenberg et al (U.S. Patent No. 5,345,333) in view of Dekel et al (U.S. Patent No. 5,810,008).
 - a. Referring to Claim 1, Greenberg discloses obtaining a plurality of images of said focal plane of interest at the specimen, in which said images are taken at different angles of specimen illumination relative to each other (Greenberg at column 11,

lines 41-47, teaches by adjusting beam path shift means 23 and 24, the beam paths 33 and 34 as shown in figure 1, which pass through specimen plate 17, are adjusted. Two beam paths 33 and 34 correspond to left and right images mentioned at column 11, line 45. For each path shift adjustment, a new pair of images is created. These pairs of left and right images are the claimed “a plurality of images of said focal plane of interest at the specimen, which are taken at different angles of specimen illumination relative to each other”); and cross-correlating information obtained from the angled views by suppressing information that is not common to each angled view and substantially retaining information for said plane that is common for all angled views, whereby to produce a single output image for the said focal plane of interest to define confocal image (Greenberg at column 11, lines 41-47 teaches each pair of left image and right image is overlapped, and the overlapped portion of the image is the claimed “confocal image”, which is used to construct 3-D images. Note the overlapped portion of images is the “cross-correlating information obtained from the angled views” and it is inherent features that overlapping process suppresses information that is not common to each angled view and substantially retains information for said plane that is common for all angled views”). However, Greenberg does not explicitly teach the confocal images are confocal emulated images, and does not explain how the 3-D images are constructed based on the confocal images. Dekel et al at column 8, line 58, teaches using a image processing unit 28, which is a computer, as shown in figure 1, to create 3-D

images by stacking a plurality of two-dimensional image slices, column 9, line 38-39, and display the 3-D images at display unit 30. At the time the invention was made, it would be reasonable to assume that a person of ordinary skill in the art would like to have Greenberg's 3-D images displayed in a display unit for viewing purpose, which must require Greenberg's confocal images to be stored in digital form in a computer system as taught by Dekel, as a result the confocal image become confocal emulated images as the claim calls for, and the 3-D images are constructed by stacking a plurality of confocal emulated image, which according to Dekel, it is well known in the art, column 9, lines 38-39.

- b. Referring to Claim 2, the combination of Greenberg and Dekel teaches stacking the plurality of confocal emulated images to produce a three-dimensional reconstruction of the specimen (Dekel: column 9, line 37-39).
- c. Referring to Claim 11, the combination of Greenberg and Dekel teaches wherein said method is applied at a plurality of planes defining the thickness of said specimen, to thereby define a plurality of confocal emulated images (Greenberg at column 11, lines 41-47, teaches the beam path shift means 23 and 24 control the degree of depth perception in the final image, which is the overlapped portion, and for each shift adjustment, a new depth perception is defined in the overlapped portion of left and right images. The depth perception is the thickness of the specimen).
- d. Referring to Claim 4, the combination of Greenberg and Dekel teaches each image is obtained on a surface comprising a regular arrangement of pixels, each

pixel capable of representing absorbed light so that information on both the frequency and intensity of the light absorbed is computer readable (in Claim 1, the examiner explains the need of storing confocal images in digital form in order to construct 3-D images, which inherently requires pixel representation of frequency and intensity of the light).

- e. With regard to Claim 5, see explanation in Claim 4.
- f. Referring to Claim 6, the combination of Greenberg and Dekel teaches wherein the cross-correlation comprises a cross correlation of information between a linearly arranged sequence of pixels from each image, the sequences at least partially overlapping (Greenberg teaches overlapping the left image and right image, and implementing the overlapping in a computer according to Dekel, it inherently requires linearly arrange sequence of pixels from each image, left image or right image).
- g. Referring to Claim 7, the combination of Greenberg and Dekel teaches wherein the cross-correlation will, for purpose of constructing a confocal emulated image, score as undesirable that specific image information that is displaced in one image relative to the other and will score as desirable that specific image information that is not displaced in one image relative to the other, and further for purposes of constructing a confocal emulated image will tend to retain desirable information and to eliminate undesirable information (as the examiner explains above in Claim 1 and Claim 6, the purpose of overlapping the left image and right image is

to obtain a confocal image, and the process of overlapping is to retain desirable information and to eliminate undesirable information).

- h. With regard to Claim 12, all the limitations are addressed in Claim 1.
- i. With regard to Claim 13, all the limitations are addressed in Claim 11.
- j. With regard to Claim 14, all the limitations are addressed in Claim 2.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

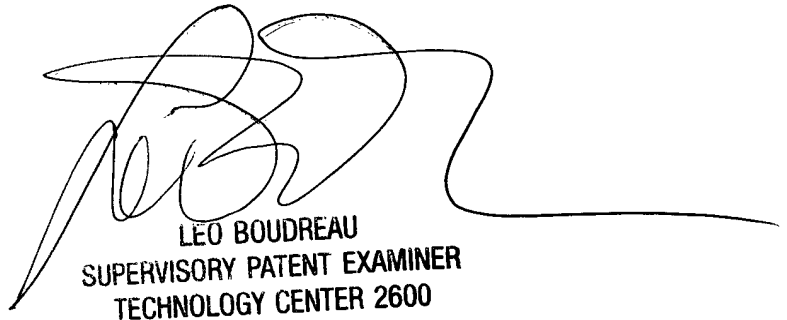
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y Lu whose telephone number is (703) 306-4057. The examiner can normally be reached on 8:30AM-5PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Y. Lu



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